DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002826
Date Inspected: 06-Jun-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1530
Location: Shanghai, China

CWI Name: Hu Wei Qing and Shazhi

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG and SAS Tower Fabrication

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on these Bays mentioned below;

Bay 4: Tower Diaphragm
This QA was called by ZPMC QC to verify the existence of cracked tack welds they have found on tower diaphragm plate splice butt joint on WSD1-SA267-3A/4A (3B/4B). This QA observed that several of the butt groove tack welds have indeed cracked on both ends of each tack weld (around 80% of the tacks were affected). One ABF Inspector Xiao Jun Peng and ABF QA Manager Don Walton were present at the scene assessing the situation and informed this QA that they already notified Caltrans regarding this incident. Per Mr. Walton and during their conversation (between Caltrans and ABF) it was agreed to remove all the tack welds in this particular splice butt joint. This QA observed ZPMC personnel grinding off the tack welds and sometime during the end this shift all the tack welds were seen completely ground. See two photos below.

Bay 7: OBG - Floor Beam Sub Assembly:
This QA observed FCAW(3G) CJP welding on four skewed diagonal brace connector plate seen complete on floor beam sub-assembly weld joints SSD17-PP027-005/006 and SSD17A-PP027-131/132. Cutting/removal of its weld run off tab using carbon arcing was in progress.

The QA Inspector randomly observed ZPMC welder Huang Xin Lai ID Number 044780, utilizing the Submerged Arc Welding (SAW) Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-2221-B-L2c-S-1, to weld the fill pass in plate splice butt joint FB034-001-101 floor beam. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 504 amps, 30.1 volts with a travel speed of 444 mm per minute. The weld parameters appeared to comply with contract requirements. This QA also observed another ZPMC welder Chen Xi Feng ID #052692 using the same process and procedure on floor beam plate splice butt joint welding fill pass on FG034-001-079.

FCAW fillet welding (2F) was also observed on stiffeners to web plate of floor beam sub-assemblies FB015-007-015/016 and FB015-007-011/012. Two ZPMC welders working on these were identified as Hong Shuili ID# 044815 and Lu Long Xian ID# 044786. ZPMC CWI Hu Wei Qing was noted monitoring the parameters. FCAW(2F) fillet welding on four sides of flange to web was also observed on welded spacer beam W5.5 X 25.5 inches long for various floor beams FB006-034-013~016 by two ZPMC welder Chen Chun Zong ID# 044824 and Zhang Liang ID# 067036 using WPS-B-T-2132-3. Tack welding/fit-up was continuing on stiffener to web plate of floor beam FB015-012-013/014 and FB009-006-013/014 using 4.0mm electrode TL-508. Cutting of access hole on 300mm X 300mm hallow steel diagonal brace using oxy-acetylene for various floor beam sub-assemblies was also observed.

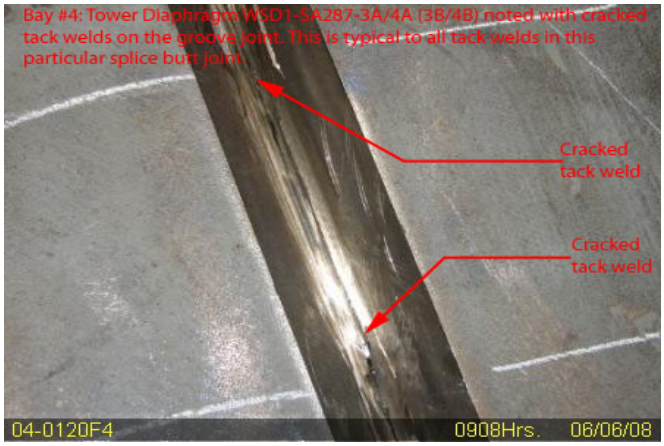
This QA Inspector randomly observed ZPMC NDT Botin Yui perform 10% Magnetic Particle Testing on fillet welds and PJP welds of longitudinal diaphragm sub-assembly LD004-003-003/004, LD004-003-012, LD003-004-003/004, and LD003-004-012. It was noted that rust and scale have been removed by ZPMC workers on weld areas prior MT testing. Electromagnetic Yoke was used with alternating current (AC) as power source. The detection media used was dry yellow ferromagnetic particles and applied with powder blower while the magnetizing force is on. While the ZPMC NDT Botin was MT testing the welds, this QA randomly perform VT on fillet welds and PJP welds of longitudinal diaphragm mentioned and appears conforming to the project requirements. This QA also observed ZPMC’s conduct of MT on these welds deemed acceptable.

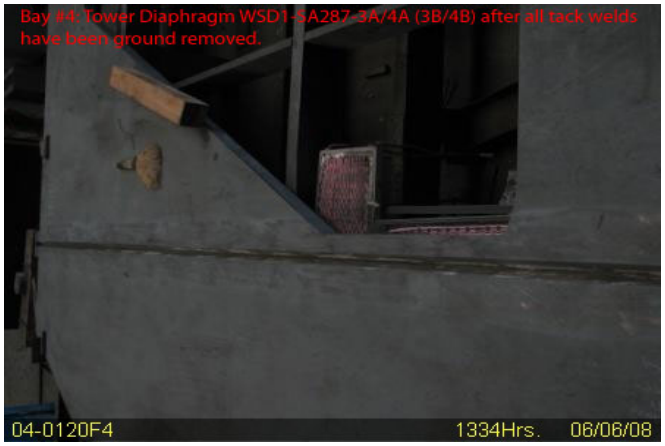
Bay 8: Tower Diaphragms
The QA Inspector randomly observed ZPMC welder Xu Pei Pei ID Number 050323, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld the fill pass on plate butt splices of Tower Diaphragm WSD1-SA309-11A/12A. The QA Inspector randomly observed ZPMC CWI Lvliqing, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 604 amps, 29.8 volts with a travel speed of 460 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Yun Chen Sun ID Number 050316, utilizing the FCAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2331-TC-P4-F, to weld flange to web plate corner joint of longitudinal diaphragm LD020-002-012. The QA Inspector randomly observed ZPMC QC Wong Xing Pin monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 297 amps, 30.7 volts with a travel speed of 317 mm per minute. The weld parameters appeared to comply with contract requirements. On another longitudinal diaphragms LD003-007-011 and LD003-005-011, one ZPMC welder Bi Lai Shu ID #045280 was observed utilizing the FCAW Process in the 2F position to do fillet weld between flange to web plate using WPS-B-T-2132-3. Welding parameters measured by the same QC deemed

acceptable to project requirements.

Other related welding activities observed in this bay 8 was bevel cutting to 45 degree longitudinal web plates 14mm thick marked LD3A, LD1A, LD21A and LD2A using oxy-acetylene gas and cutting run off tab on completed weld joints on various tower diaphragm flanges using carbon air arc process.





Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer